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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,433	10/28/2005	Heinz Florian	14219-087US1	1001
26161	7590	01/11/2008	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			ROSENAU, DEREK JOHN	
ART UNIT		PAPER NUMBER		
2834				
MAIL DATE		DELIVERY MODE		
01/11/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/532,433	FLORIAN ET AL.
Examiner	Art Unit	
Derek J. Rosenau	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 October 2005.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 10-15 is/are allowed.
- 6) Claim(s) 1,4-7 and 9 is/are rejected.
- 7) Claim(s) 2,3,8 and 16-20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/22/05.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

1. The disclosure is objected to because of the following informalities. At page 1, line 14, "ND" should be "Nd".

Appropriate correction is required.

***Claim Objections***

2. Claims 16-20 are objected to because of the following informalities: in claim 16, it appears that "AG" should be "Ag". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-7, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Feltz et al. (US 20020098333).

5. With respect to claim 1, Feltz et al. discloses a piezoelectric component (Fig 2a and Paragraph 12) comprising: a stack of ceramic layers (Fig 2a and Paragraph 29); and electrode layers between ceramic layers in the stack (Fig 2a and Paragraph 29), wherein the electrode layers comprise copper (Paragraph 29); and wherein the ceramic layers comprises a lead-zirconate-titanate that is doped with Nb (Paragraph 12).

6. With respect to claim 4, Feltz et al. discloses the piezoelectric component of claim 1, wherein the ceramic layers are substantially free of Ag (Paragraph 12).

7. With respect to claim 5, Feltz et al. discloses the piezoelectric component of claim 1, wherein the ceramic layers and the electrode layers are sintered together (Paragraph 12).

8. With respect to claim 6, Feltz et al. discloses an actuator comprising the piezoelectric component of claim 1 (Paragraph 3).

9. With respect to claim 7, Feltz et al. discloses the actuator of claim 6. The claim language "having a deflection of about 30 micrometers and an energy loss of about 20 mJ" does not define further structural elements. As Feltz et al. discloses each of the recited structural elements, the properties of having a deflection of about 30 micrometers and an energy loss of 20 mJ would be inherent.

10. With respect to claim 9, Feltz et al. discloses the piezoelectric component of claim 1, wherein the electrodes are substantially free of holes. Feltz et al. does not disclose the presence of holes of any kind in the electrodes.

***Allowable Subject Matter***

11. Claims 10-20 are allowed.

12. The following is an examiner's statement of reasons for allowance. The prior art does not disclose or suggest "ceramic layers comprise a material having a composition of " $Pb_{0.988}V_{0.012}(Zr_{0.504+x}Ti_{0.472-x}Nb_{0.024})O_{3.000}$ , wherein  $-0.05 \leq x \leq 0.05$ " in combination with the remaining claim elements of claim 10. The prior art does not disclose or suggest "wherein the ceramic comprises a material having a composition of  $Pb_{0.988}V_{0.012}(Zr_{0.504+x}Ti_{0.472-x}Nb_{0.024})O_{3.000}$ ,  $-0.05 \leq x \leq 0.05$ " in combination with the remaining claim elements of claim 16.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

13. Claims 2, 3, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or suggest "wherein the lead-zirconate-titanate comprises a material having a composition of  $Pb_{0.988}V_{0.012}(Zr_{0.504+x}Ti_{0.472-x}Nb_{0.024})O_{3.000}$ ,  $0.05 \leq x \leq 0.05$ " in combination with the remaining claim elements of claim 2.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kondo et al. (US 2004/0140535) discloses that vanadium, among a large number of other materials, may be included in a piezoelectric ceramic composition (Paragraph 116); however, does not disclose or suggest the claimed relative compositions for the elements making up the piezoelectric ceramic material.

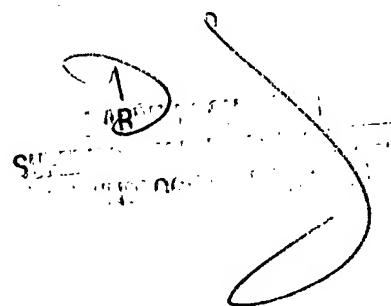
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek J. Rosenau whose telephone number is 571-272-8932. The examiner can normally be reached on Monday thru Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Derek J Rosenau  
Examiner  
Art Unit 2834

DJR  
12/27/2007

A handwritten signature in black ink, appearing to read "Derek J. Rosenau", is positioned over a large, faint, rectangular stamp. The stamp contains the text "SEARCHED" and "SERIALIZED" in a stylized, overlapping font.